Data Needs Discussion:
Major points for the Working Group

- Data needs supporting ecosystem approaches are more that the sum if species, information, protected species and socio-economic. EAF issues of importance include trophic interactions, total ration and diet changes. Habitat, fishery interactions, life history. Climate change and nutrient loading. Social/econ dimensions. Expand data back in time to get better perspectives on ecosystem health, need long time series to develop contrasts. Expand capabilities in taxonomy and stock ID. Focus on interactions monitoring and research.

Data Needs Discussion:
Major points for the Working Group

- EAF-EAM models should be used to guide data initiatives – objectives for management should be basis. What is necessary for MSE, and policy decisions? To good good science to make better MSE? Collaborative setting of objectives, science develops models and indicators developed, tested, for sensitivity. Fundamental issue is emergent, conservative properties of ecosystems. (e.g., properties of the system differ from properties of the parts). Top-down data collection hypothesis driven, multiple models drive data collection. Focus on variability in space/time/ontogeny. Process-level feedbacks need to be considered in selection of data streams. Balance between formal hypothesis testing and time series monitoring. Science based adaptive approaches to help identify key unknown drivers. Known big data monitoring gaps. Data mgt. Plan for monitoring, interactions, inventory and historic. Ecosystems require DMS more so than social sciences. Complex systems analysis.

Data Needs Discussion: (continued)
Major points for the Working Group

- Collaborative approaches to data scavenging and collection. Need an assessment of what is there – data QA/QC. Finite resources means need to revisit existing Monitoring programs, sometimes revisit monitoring using intense process studies. Data/information needs should be locally adapted. Priority setting for complex systems with multiple objectives. Business as usual won't necessarily provide What we need, spatial contrasts may reveal processes under differing use impacts.

- EIS process provides guidelines for data and analysis, community impact assessments. Prioritize information now, future. Interaction between science mgt. need dialog False dichotomy to prioritize based on science or mgt. needs. Note EAF/EAM requirements are different. Boundary issues are important in data priorities.

- Data models (open, collaborative, sharing) must support governance system. Data matrix according to models